



Community-based animal health workers in action in Maasai communities, Tanzania



out in May 2001 in Ngage, Loiborsoit B, and Ruvu Remit villages.

### Methodology

We focused on the following issues and questions:

1. *How do people describe changes that have occurred in the community since the start of the project e.g. how has livestock mortality and morbidity changed since the CAHWs started to work?*

To answer these questions we used semi-structured

interviews (SSI) to understand local perceptions of benefits derived from the project. We then used proportional piling to compare these benefits at two points in time – before the project (pre-1998) and after (post-April 2001).

2. *Do people relate these changes to project activities, if at all? e.g. how has the work of the CAHWs affected livestock mortality and morbidity?*

Again, we used SSI to identify factors that had contributed to these changes. These factors might be project activities or inputs such as the work of CAHWs, the veteri-

nary drug supply system, professional veterinary supervision, and community participation. Alternatively, factors could be identified that had nothing to do with the project (e.g. rainfall and good grazing). We used simple ranking to rank these factors in order of importance.

3. *If and how do changes resulting from the project impact on people's livelihoods? e.g. if our project has reduced livestock disease, how has this change affected the lives of the people in the project area?*

We used ranking to show the relative importance of major foodstuffs used by respective communities, and the order of socio-economic benefits as perceived by communities. We also compared indicators such as numbers of milking cows to pre-project baseline data.

## Results

### What were the main indicators of change?

Semi-structured interview of groups revealed the benefits mentioned below. The groups were split by gender. Benefits perceived by men included:

- decrease in calf mortality due to ECF
- knowledge on the treatment of mange
- improved animal husbandry
- reduced abortion rate (one village only)
- presence of CAHWs, although they are not enough
- improved availability of veterinary drugs.

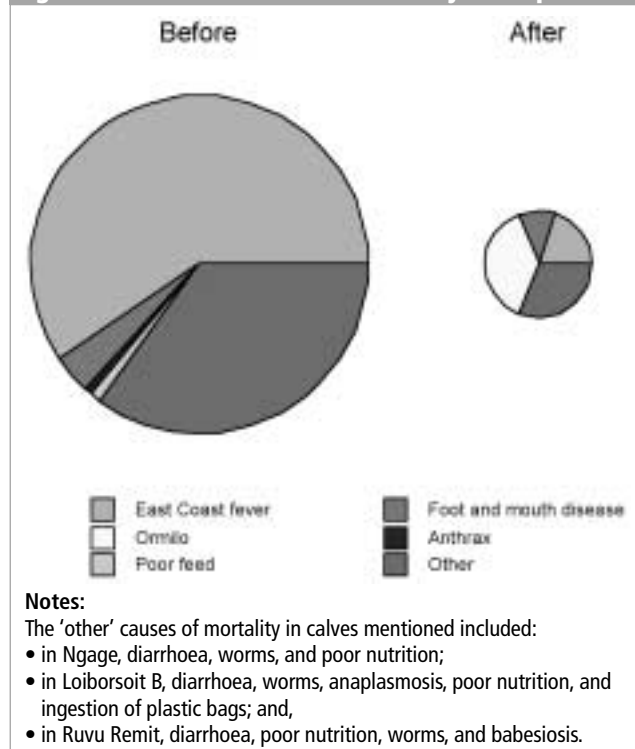
Benefits perceived by women included:

- increased milk availability
- increased time for other activities as less time is spent feeding, drenching, and collecting green grass for sick animals.

The next stage involved the use of proportional piling to compare the situation prior to and after the start of the project. Parameters used for comparison were milk availability, disease prevalence, and abortion rate. Abortion rate was mentioned as a benefit in only one village. We therefore studied it in that particular village alone. The community did not mention adult mortality decrease as a benefit, but since we were interested in it, we asked the groups to show the situation before and after the project. We used cattle parameters rather than all type of livestock firstly because many of the benefits mentioned are concerned with cattle. Additionally, cattle are the most important livestock in these communities, which is probably why people kept referring to cattle. Thirdly, we had a view that since we are assessing impact, rather than taking every aspect of outcomes, we should use only the most important parameters, importance here being determined by communities.

Proportional piling results are as follows:

Figure 2: 'Before and after' cattle deaths by health problem



### Cattle mortality

Results from 'before and after' proportional piling of diseases causing cattle deaths are shown in Figure 2. This diagram was created by summing calf and adult cattle deaths by disease in each village, and recognition that trends were similar in each village.

The overall picture was that cattle deaths reduced substantially during the project, particularly due to East Coast Fever (ECF). However, a new disease called ornilo had appeared and become the most important cause of death. Deaths due to ECF were reduced mainly by treating calves showing signs of ECF with oxytetracycline 30%. CAHWs, under veterinary supervision and monitoring, performed treatments, taught herders how to treat, and provided field supply of drugs.

### Increased milk availability

Increased milk availability was mentioned as one of the most important household benefits perceived by women. They were asked to compare milk production before the project and after in terms of quantity of milk available (Figure 3).

The number of stones used in Ruvu was only 22 as the women had difficulty in understanding the concept of piling stones to represent milk. When it was suggested that each

Figure 3. Comparative increase in milk availability before and after the project

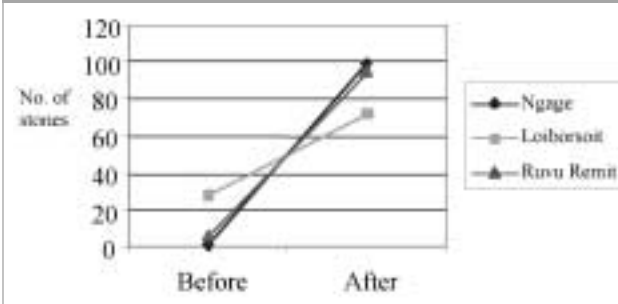


Table 1: Factors contributing towards project benefits

Rank	Ngage	Loiborsoit	Ruvu Remit
1st	Provision of drugs	Community participation	Community participation
2nd	CAHW activities	CAHW activities	Community sensitisation and training
3rd	Presence of supporting veterinarian	Availability of drugs	CAHW activities
4th	Good training given to CAHWs	Close-operation between community and veterinarian	CAHWs having bicycles
5th	Knowledge of the importance of veterinary drugs	Knowledge of the importance of animal health	
6th	CAHWs having transport	Fair price for veterinary medicines	
7th	Community participation	CAHWs having bicycles	
8th		Encouragement from visitors, both national and international	

stone represented one calabash they decided that 100 calabashes of milk was too much. The actual figures in Ruvu were one calabash before the project and 21 calabashes after. These figures have been rounded to percentages in Figure 3 to enable comparison with the other two villages. Although cattle deaths due to ornilo have increased, the increased calf survival is still large to offset increased cattle losses and still remain with a large herd that increases milk production significantly.

**Project benefits**

Through semi-structured interviews, communities were asked to mention factors, which contributed to the project benefits (Table 1). The purpose of this exercise was to obtain community perception on the linkages, if any, between project activ-

Table 2: How had the project affected people's livelihoods?

Rank	Ngage	Loiborsoit	Ruvu Remit
1st	Increased milk availability	Increased milk availability	Increased milk availability
2nd	Milk available for sale as previously this was not possible	Improved human health due to ability to foot health bills	Increased income from the sale of cattle has allowed an increase in cultivation
3rd	Ghee available for children	Increased income	Increased ability to provide schooling for children
4th	Increase in livestock population	Improved ability to educate children	Increased ability to build good houses
5th	Increase in livestock trade and income	Improved quality and cleanliness of clothing	Improved human health
6th	* Increased ability to pay school fees and contribute in community development projects	Increased area under crop cultivation	
7th	Good meat available for traditional meat eating camps, locally known as <i>orpul</i>	Increased ability to build better housing	
8th	Improved human health	Availability of good quality meat improved	
9th		A sense of well-being resulting from having a larger herd	

\* The attendance at community development sessions e.g. building classrooms has increased as there is always a goat slaughtered at the end of the day. Larger herds have increased the ability of people to donate goats for development work.

ities and perceived benefits. The contributing factors were then ranked in order of importance.

**Relating benefits to livelihoods**

Considering the benefits described by the community in terms of reduced cattle deaths and more milk, people were asked how these benefits had affected their livelihoods. Findings are summarised in Table 2.

As milk availability seemed to be such an important indicator for the project, we looked more closely at the role of milk in the diet. We asked people to rank the foods making up their staple diet in order of importance. They were then asked to explain how dry years or times of high disease incidence affected their diet.

In all cases milk was identified as the first food to disap-

pear in times of stress, followed by meat and then maize meal. Having a diet with plenty of milk was suggested as an indicator of high food security, whereas diets with more maize and little or no milk indicate hard times. At the time of the assessment, milk constituted a large proportion of the diet in all communities and so they considered themselves to be food secure.

### Comparing current situation of milk availability to established baseline-using indicators identified by communities

Using 'number of milking cows' as an indicator for household milk availability we continued the impact assessment conducting semi-structured interviews with 19 households. A household constituted a man, his wife or wives, children, and his other dependants. The results were compared to a survey of 121 households conducted in Simanjiro District seven years earlier (Muir, 1994) as shown in Tables 4 and 5.

Future monitoring would involve periodic follow up of these herders to determine increase in milking cows in the household.

### Lessons learned

#### Livelihood indicators for the future

The assessment proved to be useful for identifying indicators for future impact monitoring and assessment. For example, many of the livelihood benefits listed in Table 2 can be used to assess future work. These benefits encompass aspects of human health and nutrition, education, housing, trade, and social change. Therefore, the participatory approach clearly showed how improvements in animal health are linked to a wide range of benefits in pastoralist communities.

#### Improving the projects

Communities in the three villages discussed project weaknesses and suggested future directions. Non-involvement in dip rehabilitation was mentioned as the most important weakness that needed to be corrected. Pastoralists in village communities are the main beneficiaries of the animal health services. Conducting a participatory impact assessment gave them a systematic means of explaining the benefits accrued from the project. It is important for sustainability that they see the project as something beneficial to them. Impact assessment described here used simple participatory methodologies to obtain community perceptions and improve local ownership.

#### Responding to new disease problems

The impact assessment showed how a previously unknown disease, called ornilo, had become a very serious problem.

**Table 3: The most important foods**

Rank	Ngage	Loiborsoit	Ruvu Remit
1st	Milk	Milk	Milk
2nd	Meat	Maize meal	Meat
3rd	Maize meal	Meat	Maize
4th	–	–	Fat/oils

**Table 4. Comparison of number of milking cows between 1994 and 2001**

Number of cows milked	Proportion of cattle owners in 1994 (%) (n=121)	Proportion of cattle owners in 2001(%) (n=19)
0	28	0
1	8	0
2	13	0
3	11	0
4	11	0
5	13	0
6-10	9	21
>10	13	79

**Table 5. Comparison of milk-related indicators**

Indicator	1994 (n=121)	2001 (n=19)
Proportion of households milking at least one cow (%)	72	100
Average number of cows milked per household	5	24
Median number of cows milked per household	30	115
Mean yield per milking (litres)	0.56	0.76

Notes for Tables 4 and 5:

Although the 1994 and 2001 figures are all derived from Simanjiro District, the 1994 baseline was conducted in four villages and only one of these villages, Loiborsoit, was included in the impact assessment. As there is also a marked difference in sample sizes (121 and 19), the comparison is indicative only.

Veterinarians had not been able to confirm the diagnosis of the disease and so a research project was initiated with the national integrated tick and tick borne diseases control project coming in to investigate the problem. CAHWs assisted the research. They collected specimens such as blood and gland smears, and brain squashes, and they recorded morbidity and mortality in follow up herds in between researcher visits. They also treated cases in accordance to instructions given by researchers.

#### Important aspects to consider while applying PRA methods

- Language: when using participatory methods, people must understand clearly what is expected of them. They should also be able to discuss and express themselves. In

this work the people were Maasai pastoralists. Although they understood some Swahili (the national language), they spoke mostly the Maa language. For effective communication Maa language was used. The main facilitator used Swahili, which was translated into Maa by a co-facilitator who was fluent in Maa, Swahili, and English. During translation from local language to Swahili (or English) there is a possibility that the local translator will give his or her interpretation of what community members have said rather than what they have actually said. An understanding of local language even at rudimentary level is useful to check such a trend.

- Role of women: in pastoral areas, women have specific roles as far as livestock is concerned. Some project benefits, such as those related to milk production and calf diseases, could be observed by women better than men.

Therefore, women were given the chance to have separate discussions on project impact.

- Culture: issues discussed should not be culturally offensive to the beneficiaries. As such, the checklist for SSI was developed jointly with the Maa co-facilitator in order to ensure no culturally offensive topics were included.
- Community description of diseases: as far as animal health is concerned, pastoralists possess a rich body of knowledge. It is termed indigenous veterinary knowledge. They describe various diseases in local terms, using local language. Impact assessment involves the comparison of animal health situation before and after the project. We encouraged community members to describe and name diseases in local terminology. Community description of diseases is therefore essential in order to obtain a reliable disease situation trend.

#### ABOUT THE AUTHORS

Steven Nalitolela  
VetAid, PO Box 15249, Arusha, Tanzania.  
Email: pristeve@yahoo.com  
Rob Allport  
VetAid, PO Box 15249, Arusha, Tanzania.  
Email: roballport@vetaid.net

experience, with five years working at community level with Maasai pastoralists. Rob Allport has been the Country Programme Coordinator for VetAid in Tanzania since October 2000. He has experience in ethnoveterinary knowledge research acquired prior to becoming coordinator.

*participatory approaches and methods. A report for Vétérinaires sans frontières Belgium and Vétérinaires sans frontières Switzerland. Vetwork UK, Musselburgh.*  
Muir, A. 1994. *A Situational Analysis of Pastoralism in Simanjiro District, Tanzania.* VetAid, Midlothian, UK.

#### NOTES

Steven Nalitolela is a veterinarian working with VetAid in Simanjiro district Tanzania. He has worked in participatory animal health as well as using an holistic approach to pastoralist village development. He has 16 years work

#### FURTHER READING

A more detailed account of this work is available from the authors.  
Catley, A. 1999. *Monitoring and Impact Assessment of Community-based Animal Health Projects in Southern Sudan: Towards*

#### ACKNOWLEDGEMENTS

The impact assessment work described here was funded by the Scottish Catholic International Aid Fund (SCIAF), Scotland. The photographs were provided by VetAid Tanzania.